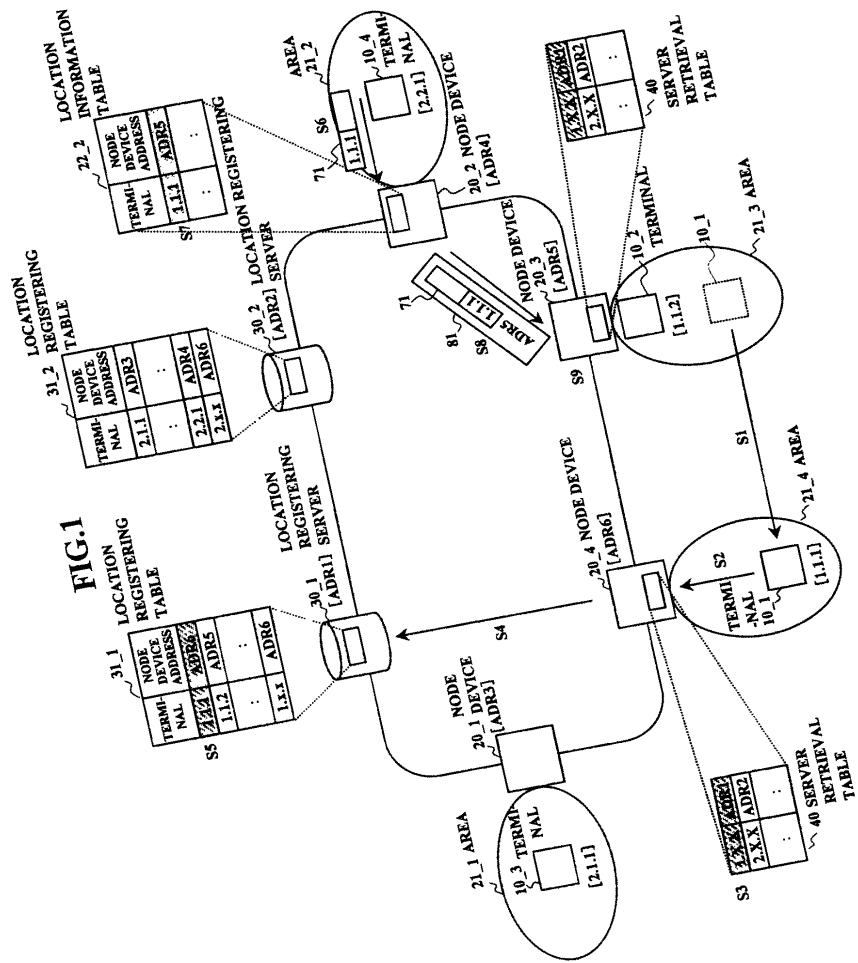


FIG. 1 is a schematic diagram of a network system 100. The network system 100 includes a plurality of node devices 20, a plurality of location servers 30, and a plurality of terminals 10. The node devices 20 are connected to the location servers 30 and the terminals 10. The location servers 30 are connected to each other. The terminals 10 are connected to the node devices 20. The node devices 20 include a node device address (ADR) and a node device name (NAL). The location servers 30 include a location server address (ADR) and a location server name (NAL). The terminals 10 include a terminal address (ADR) and a terminal name (NAL). The network system 100 is configured to provide location information to the terminals 10.



**FIG. 2**

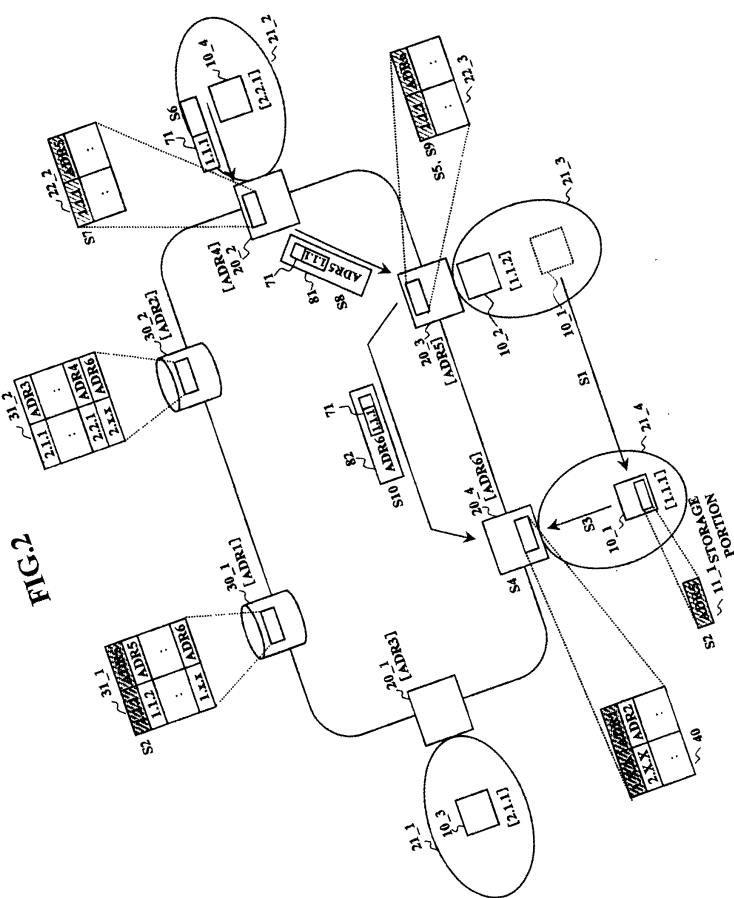


FIG. 3 is a network diagram illustrating a data flow from a source to multiple nodes. The source (31\_1) is connected to a switch (30\_1) via a link labeled [ADR1]. The switch (30\_1) is connected to a central switch (20\_2) via a link labeled [ADR2]. The central switch (20\_2) is connected to four nodes (21\_1, 21\_2, 21\_3, 21\_4) via links labeled [ADR3], [ADR4], [ADR5], and [ADR6] respectively. Each node (21\_i) contains a device (10\_i) and a switch (S\_i). The devices are labeled with their respective addresses (1.1.1, 1.1.2, 1.1.3, 1.1.4). The switches are labeled with their respective addresses (1.X.X, 2.X.X, 1.1.1, 2.2.1). The diagram shows a data flow from the source (31\_1) through the switch (30\_1) to the central switch (20\_2), which then routes data to the nodes (21\_i).

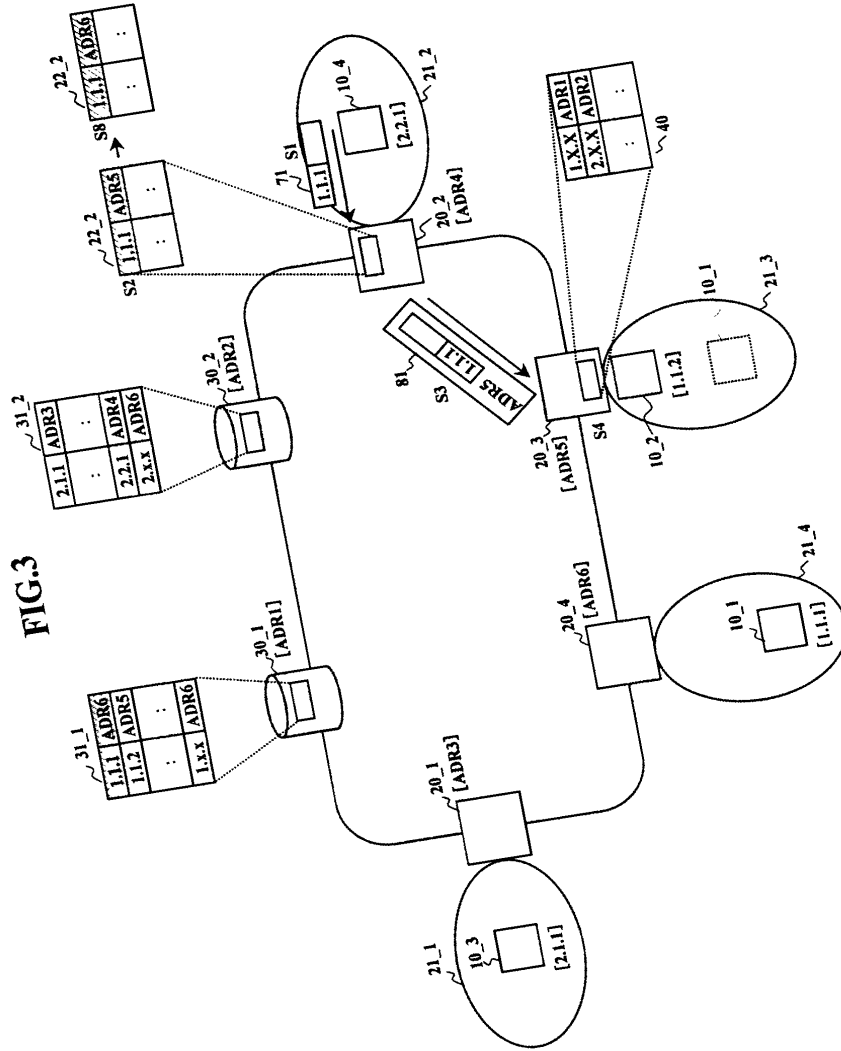


FIG. 4

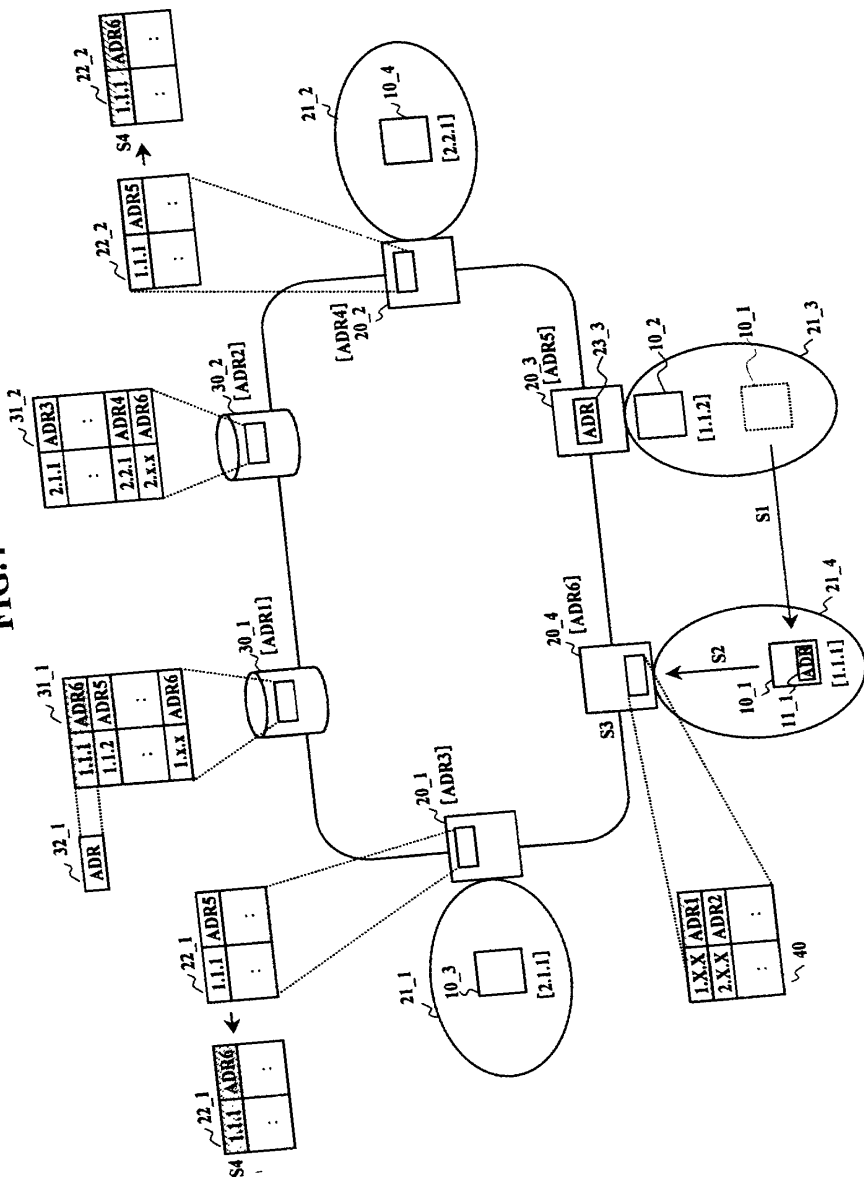
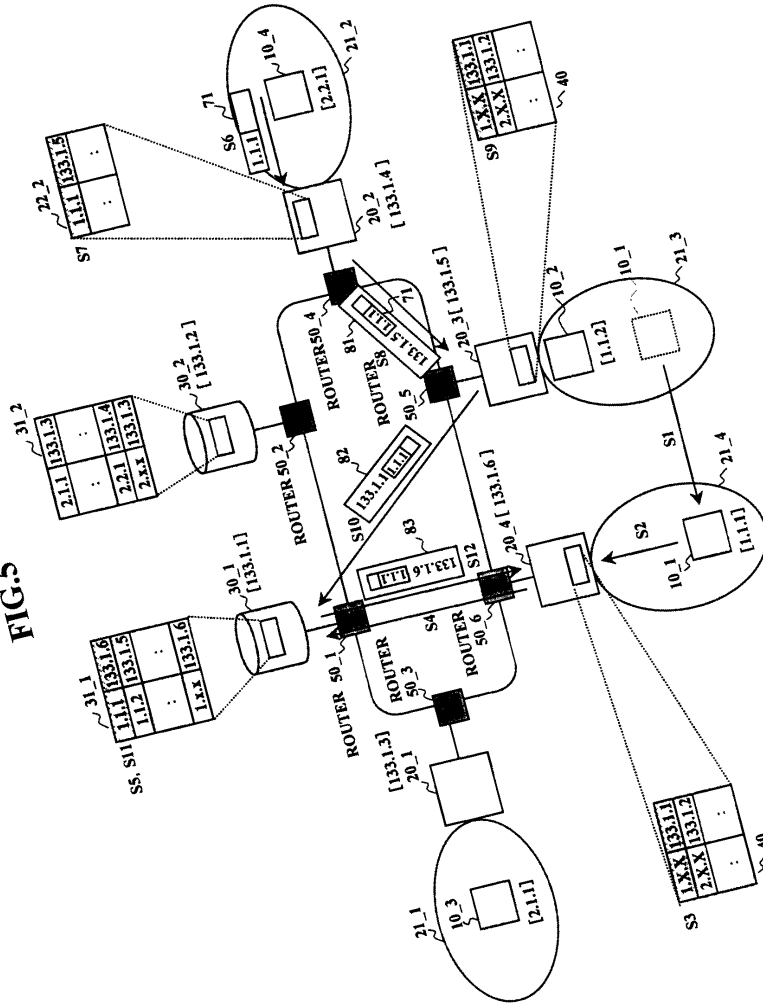
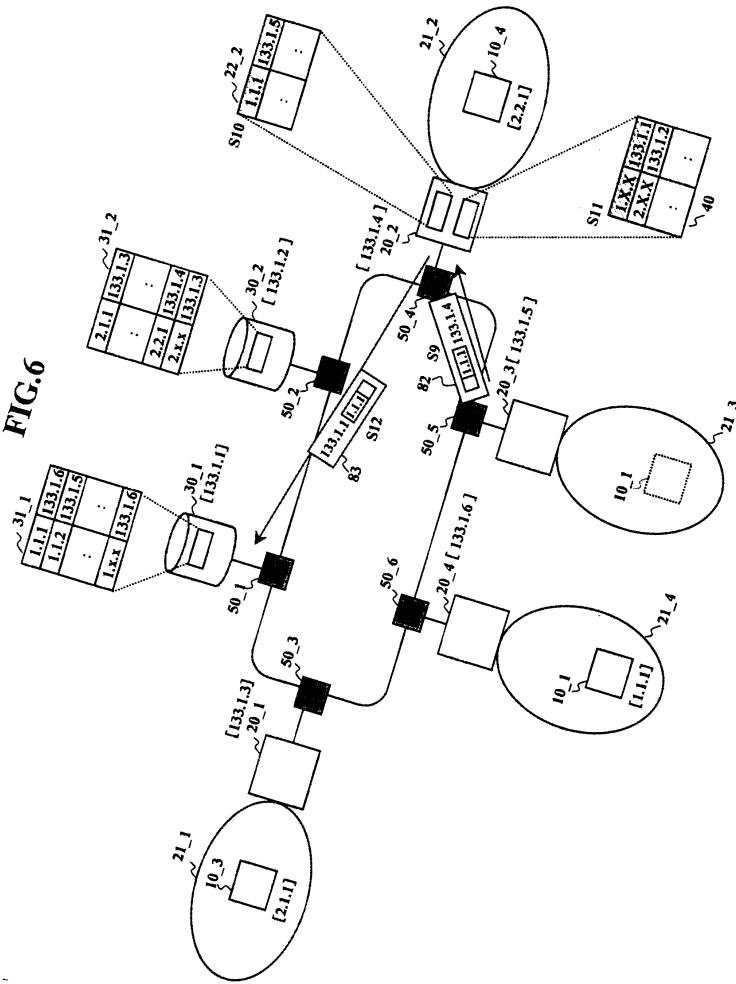


FIG. 5 is a schematic diagram of a network topology. The network includes several routers (ROUTER 50\_1, ROUTER 50\_2, ROUTER 50\_3, ROUTER 50\_4, ROUTER 50\_5, ROUTER 50\_6) and servers (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12). The routers are interconnected in a mesh-like structure. Servers S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, and S11 are connected to the routers. Server S12 is connected to ROUTER 50\_6. The diagram also shows various IP address ranges and specific IP addresses associated with the routers and servers.

FIG. 5



$$\frac{\partial^2}{\partial t^2} \left( \frac{\partial^2}{\partial x^2} \frac{\partial^2}{\partial y^2} \frac{\partial^2}{\partial z^2} \frac{\partial^2}{\partial t^2} \right) = \frac{\partial^2}{\partial x^2} \frac{\partial^2}{\partial y^2} \frac{\partial^2}{\partial z^2} \frac{\partial^2}{\partial t^2} \left( \frac{\partial^2}{\partial x^2} \frac{\partial^2}{\partial y^2} \frac{\partial^2}{\partial z^2} \frac{\partial^2}{\partial t^2} \right)$$


**FIG. 7**

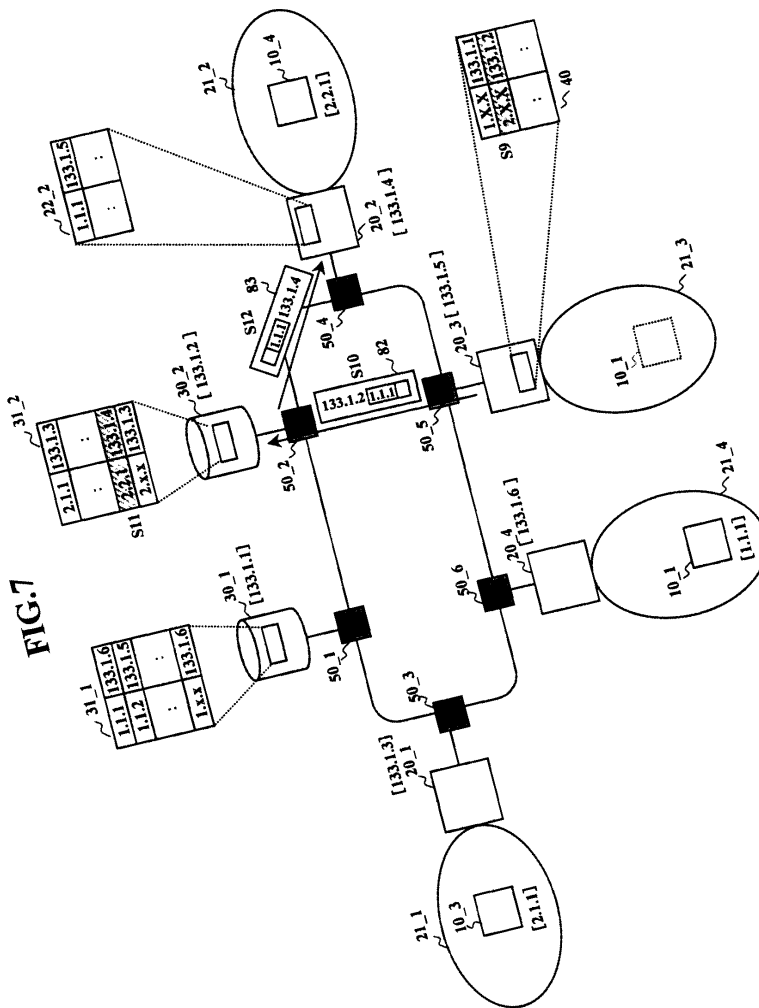


FIG.8

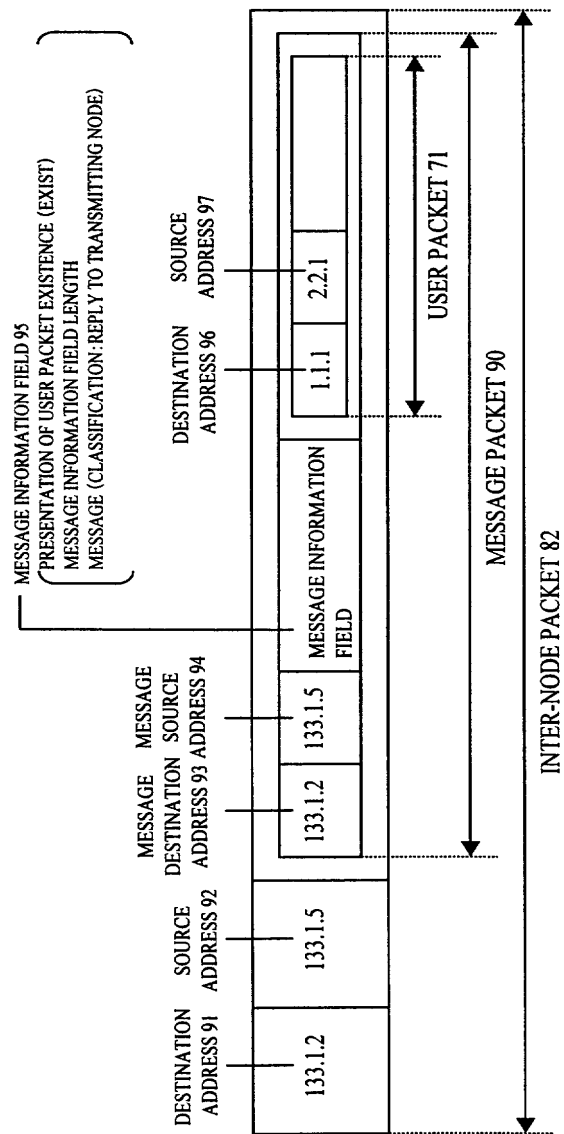






FIG. 10 is a schematic diagram of a network system 100. The network system 100 includes a central processing unit 10, a network interface 20, a storage device 30, and a cache 40. The central processing unit 10 is connected to the network interface 20, which is connected to the storage device 30 and the cache 40. The storage device 30 is connected to the cache 40. The network interface 20 is connected to a network 50. The network 50 is connected to a server 60. The server 60 is connected to a database 70. The database 70 is connected to a user 80. The user 80 is connected to the network 50. The network 50 is connected to a router 90. The router 90 is connected to a switch 100. The switch 100 is connected to a hub 110. The hub 110 is connected to a modem 120. The modem 120 is connected to a telephone line 130. The telephone line 130 is connected to a public switched telephone network (PSTN) 140. The PSTN 140 is connected to a long distance carrier 150. The long distance carrier 150 is connected to a local exchange carrier (LEC) 160. The LEC 160 is connected to a central office 170. The central office 170 is connected to a terminal 180. The terminal 180 is connected to the user 80.

FIG.10

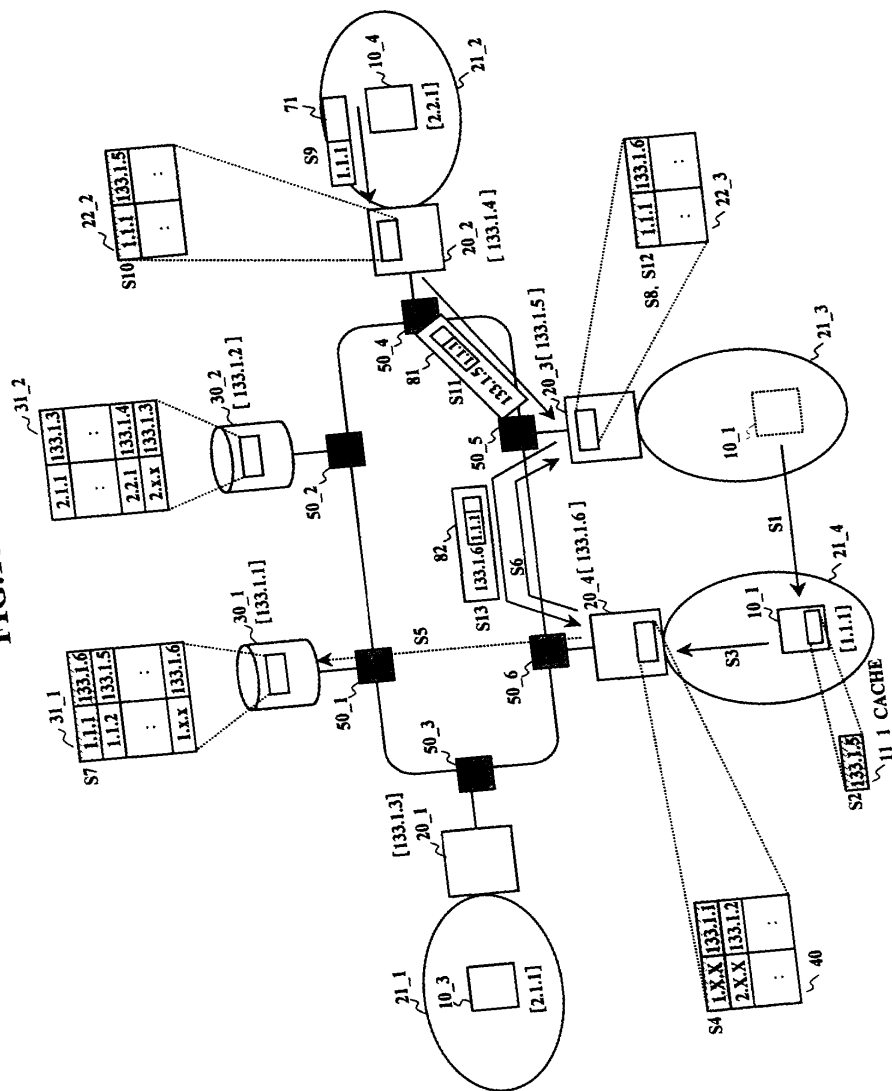
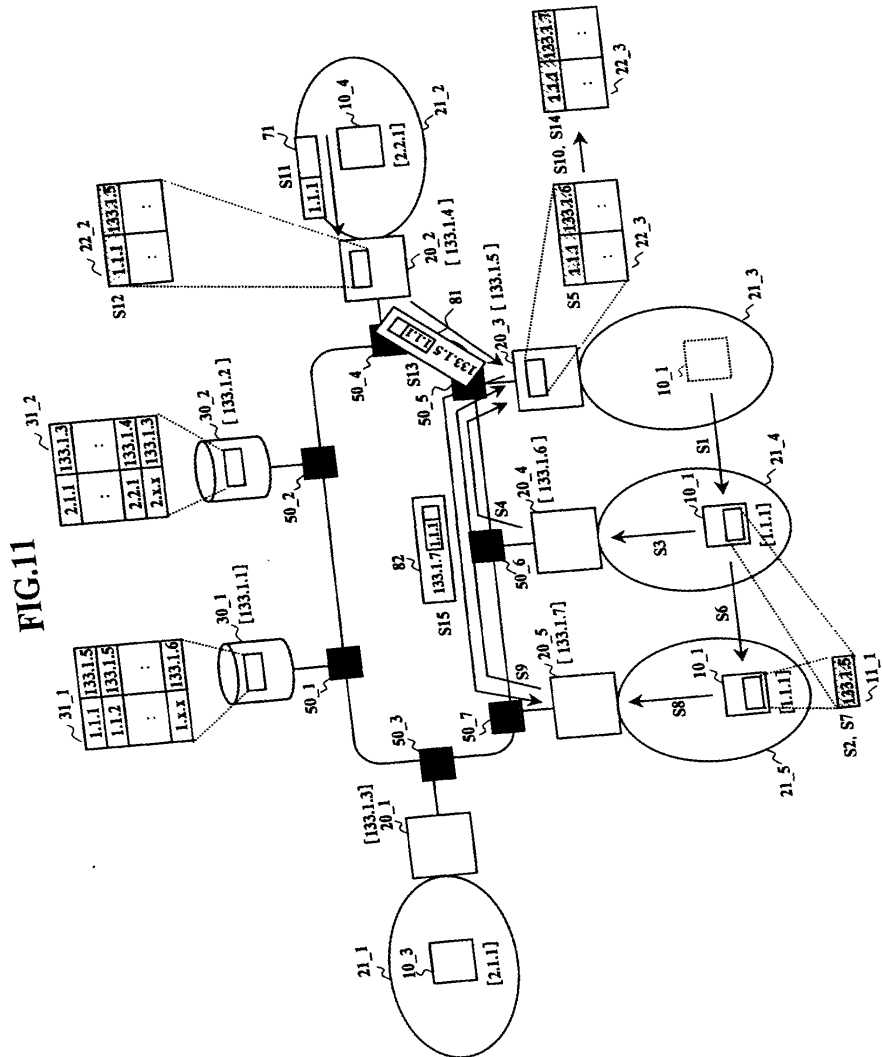
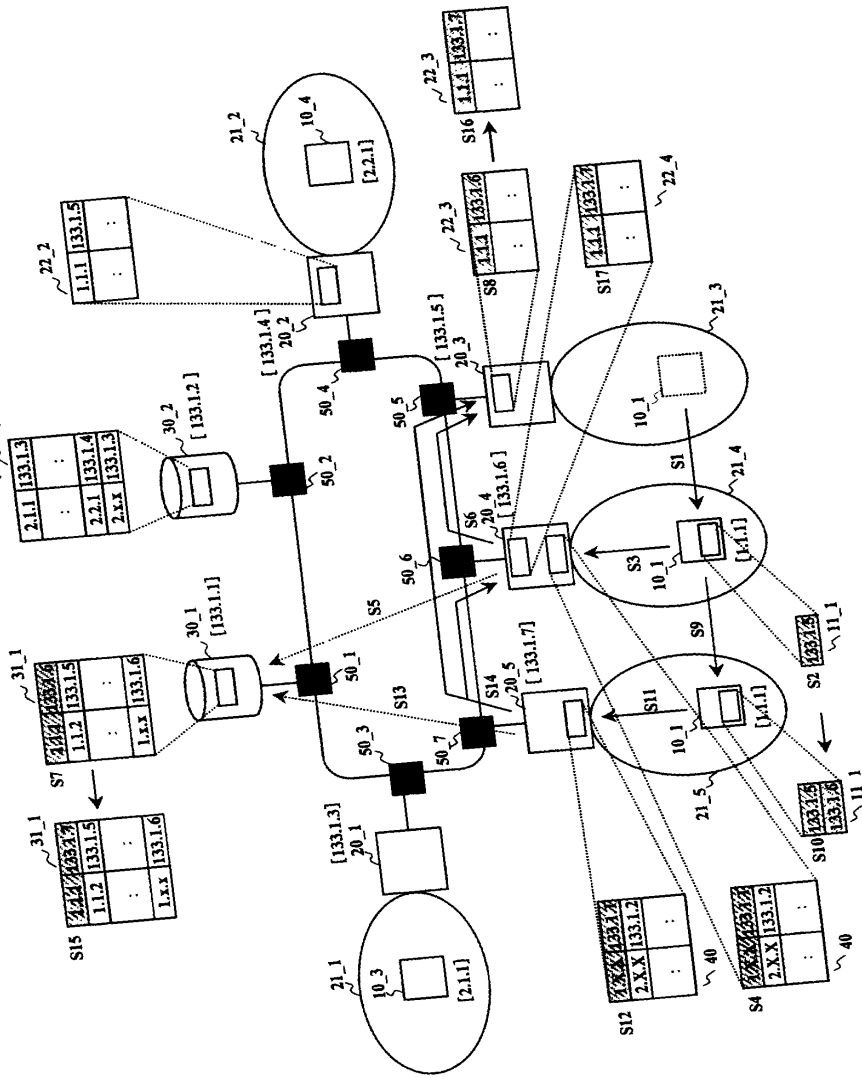
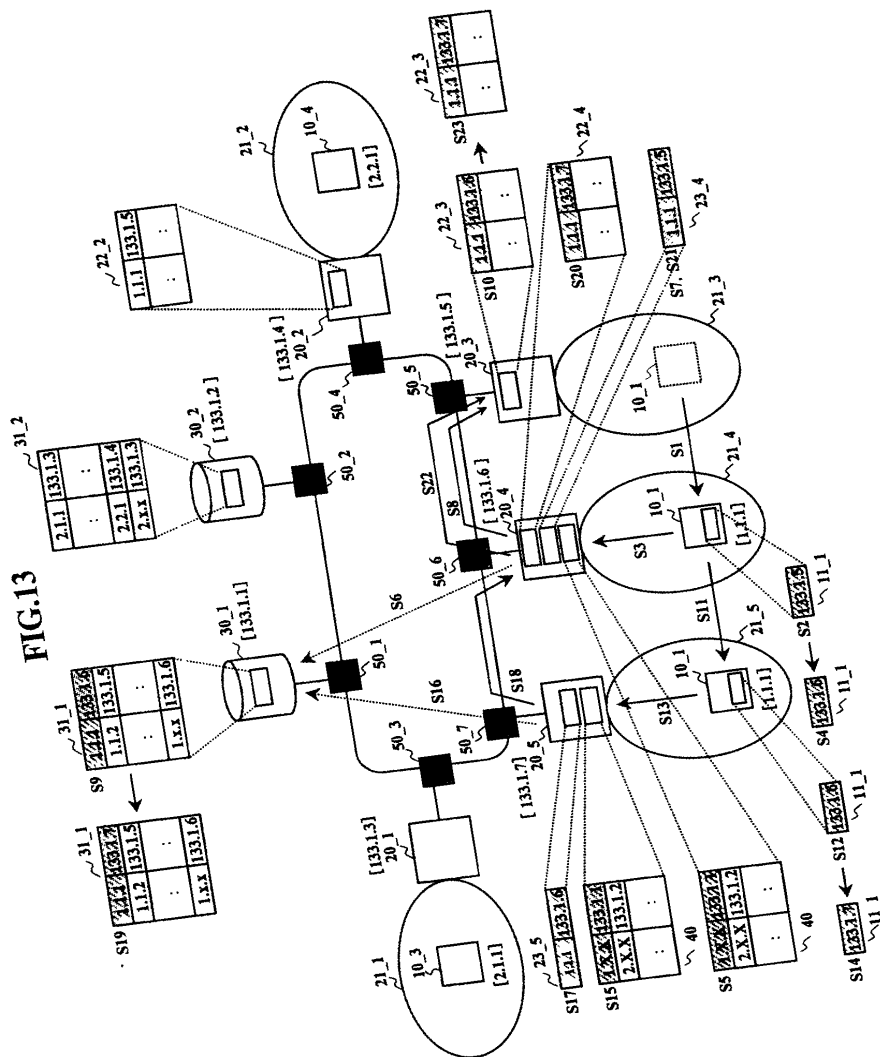


FIG. 11



**FIG.12**





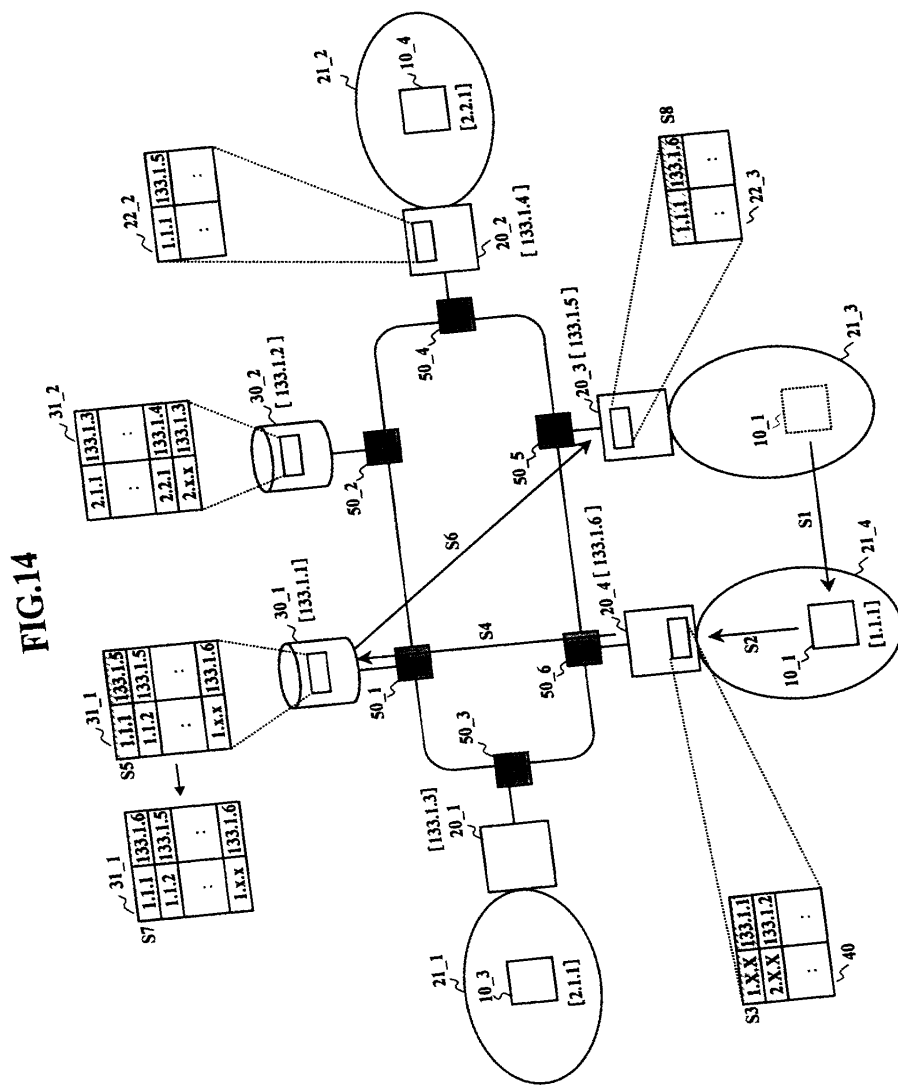
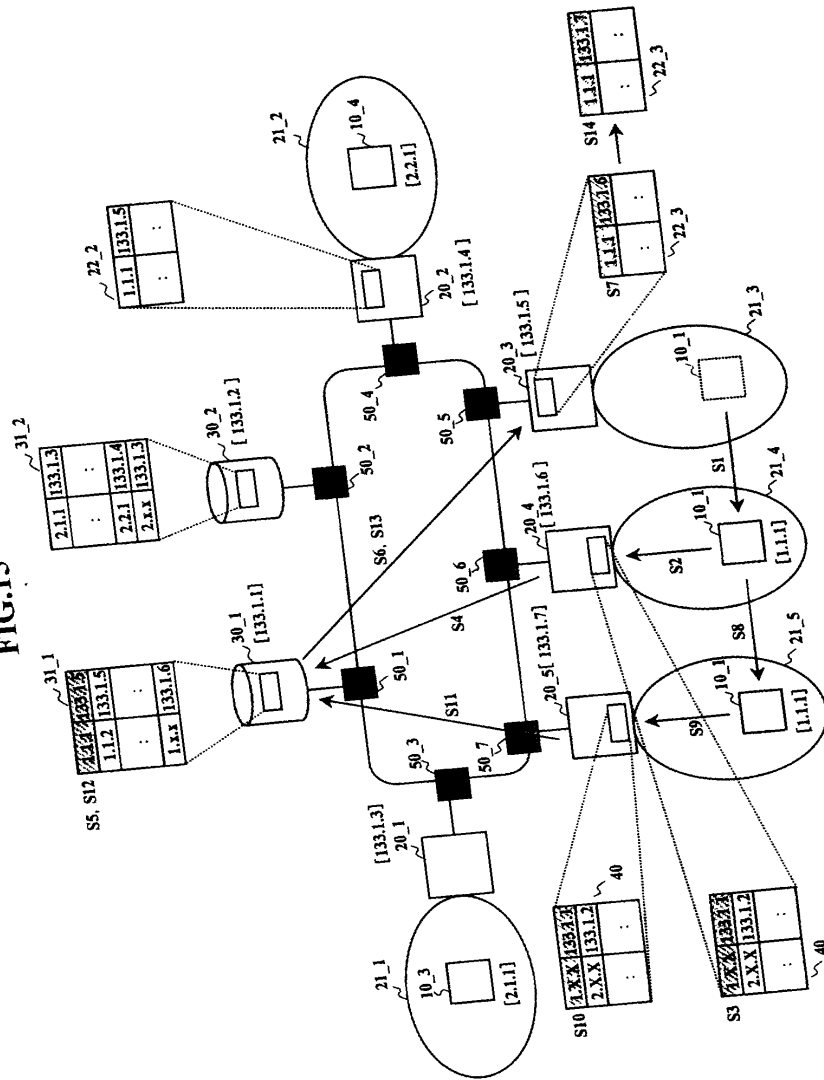
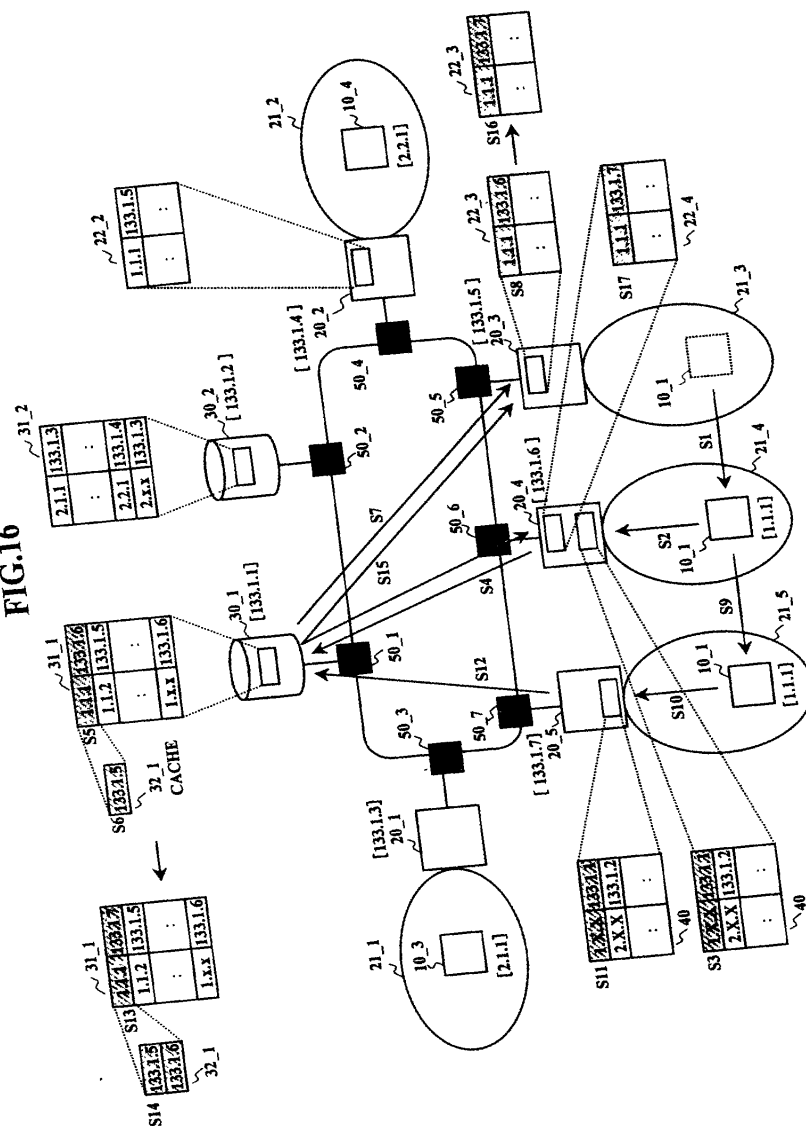


FIG. 15

FIG. 15



2255





**FIG.17**

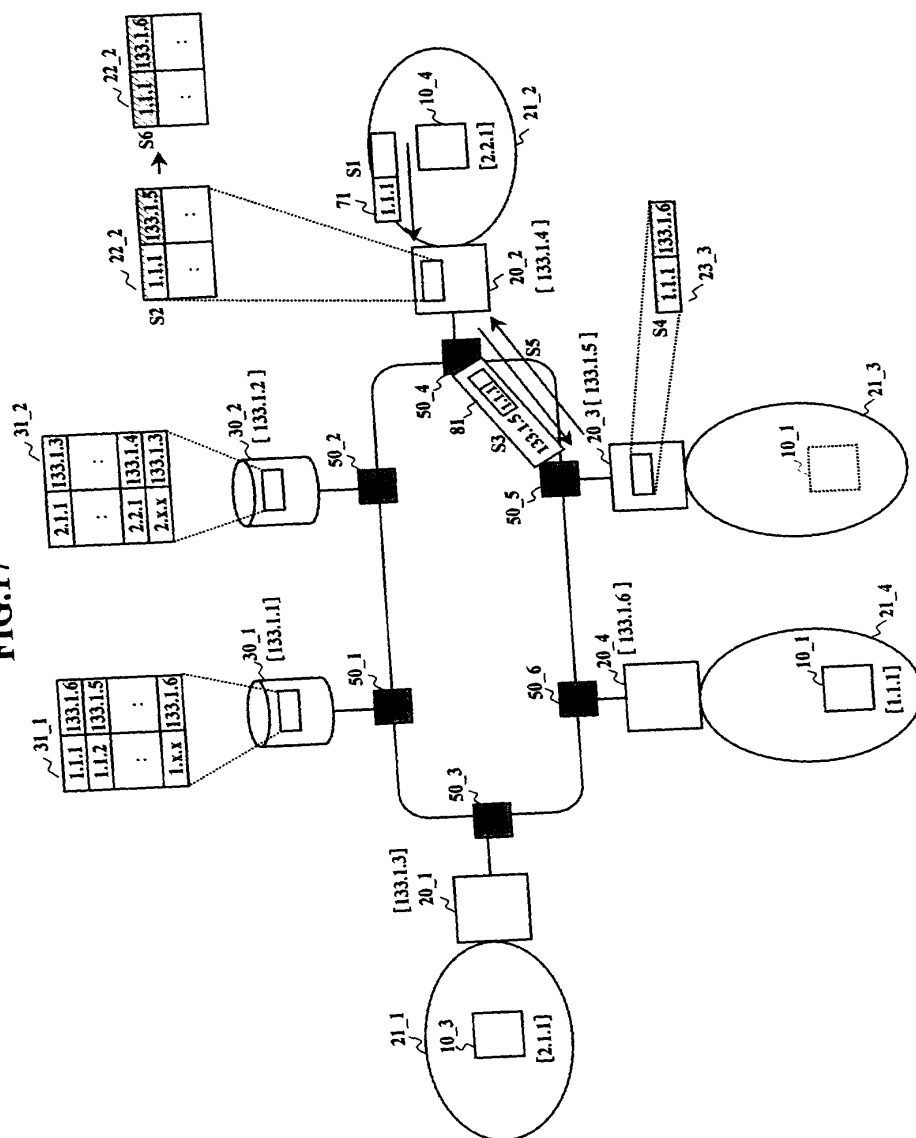
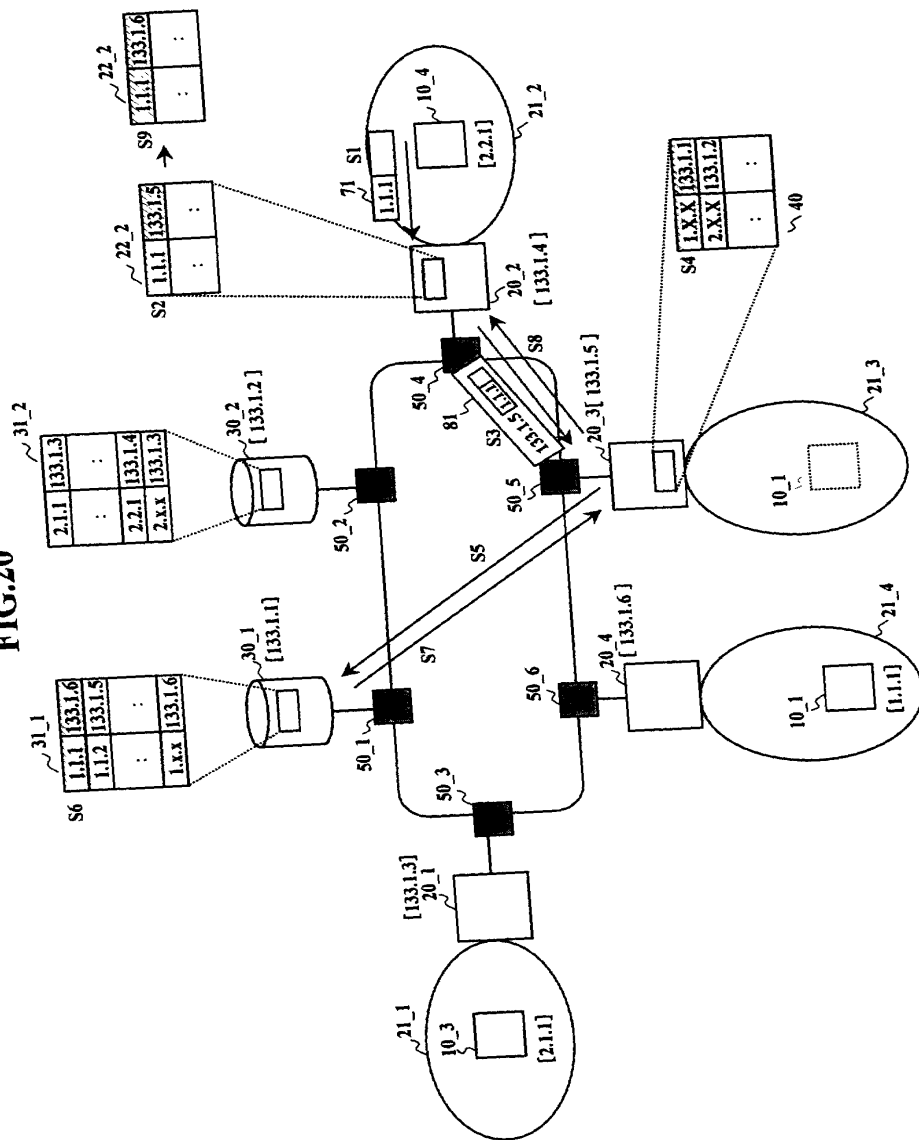


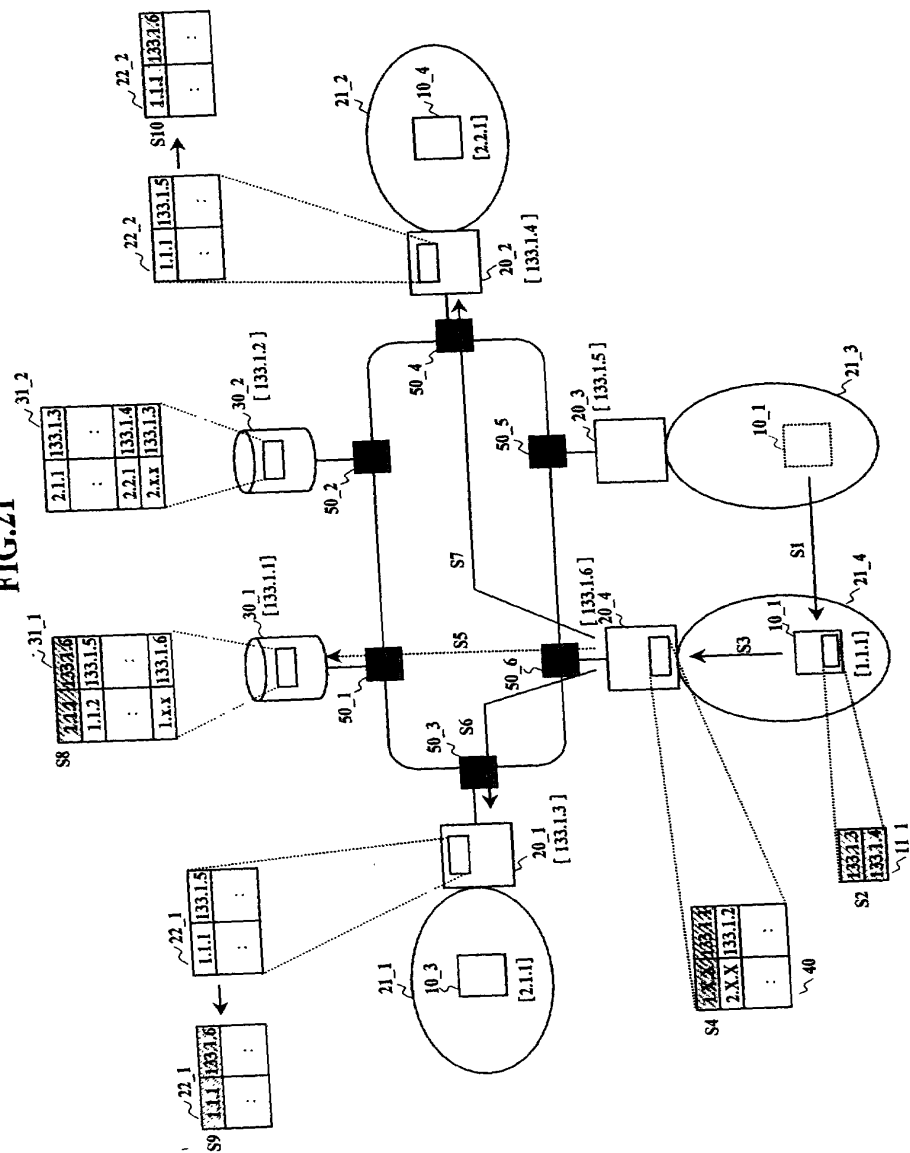




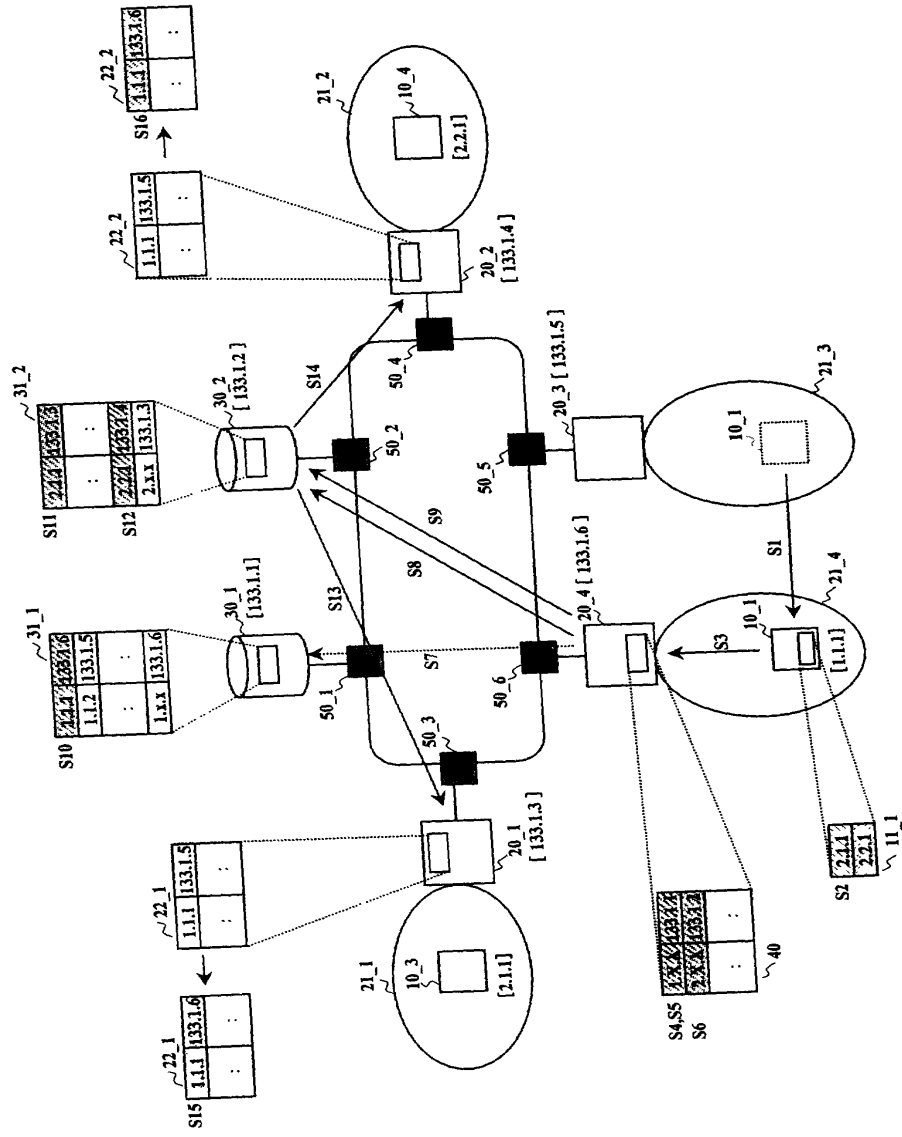
FIG. 20



**FIG. 21**



**FIG.22**



**FIG. 23**

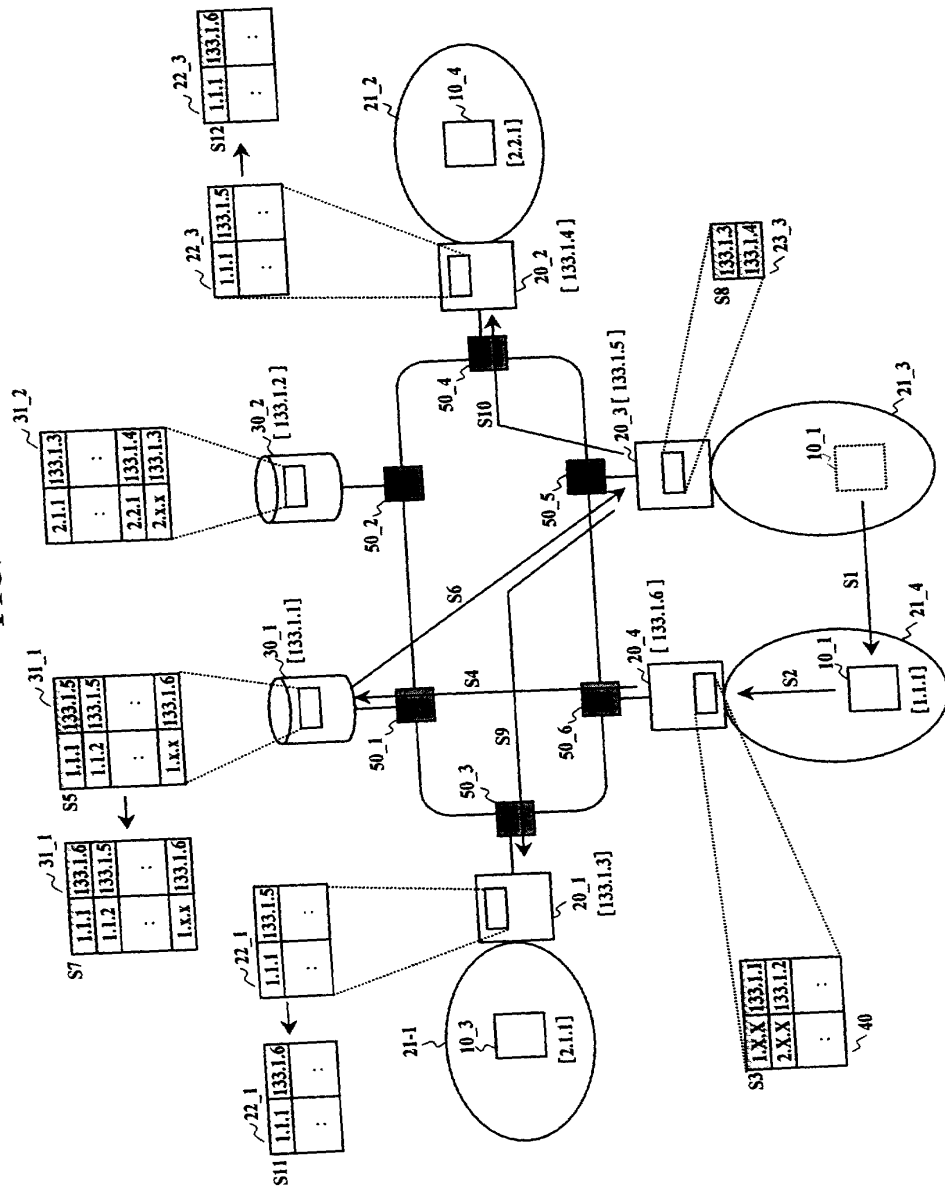
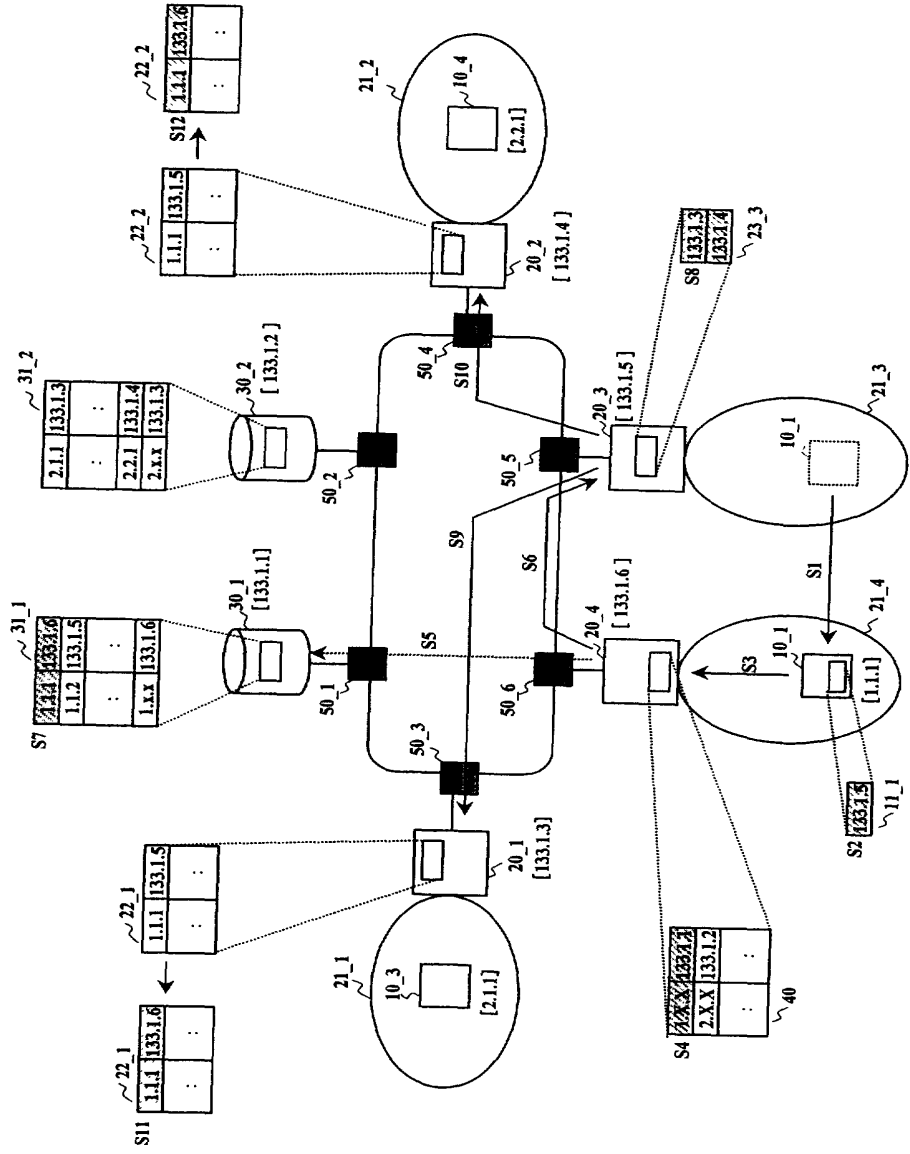
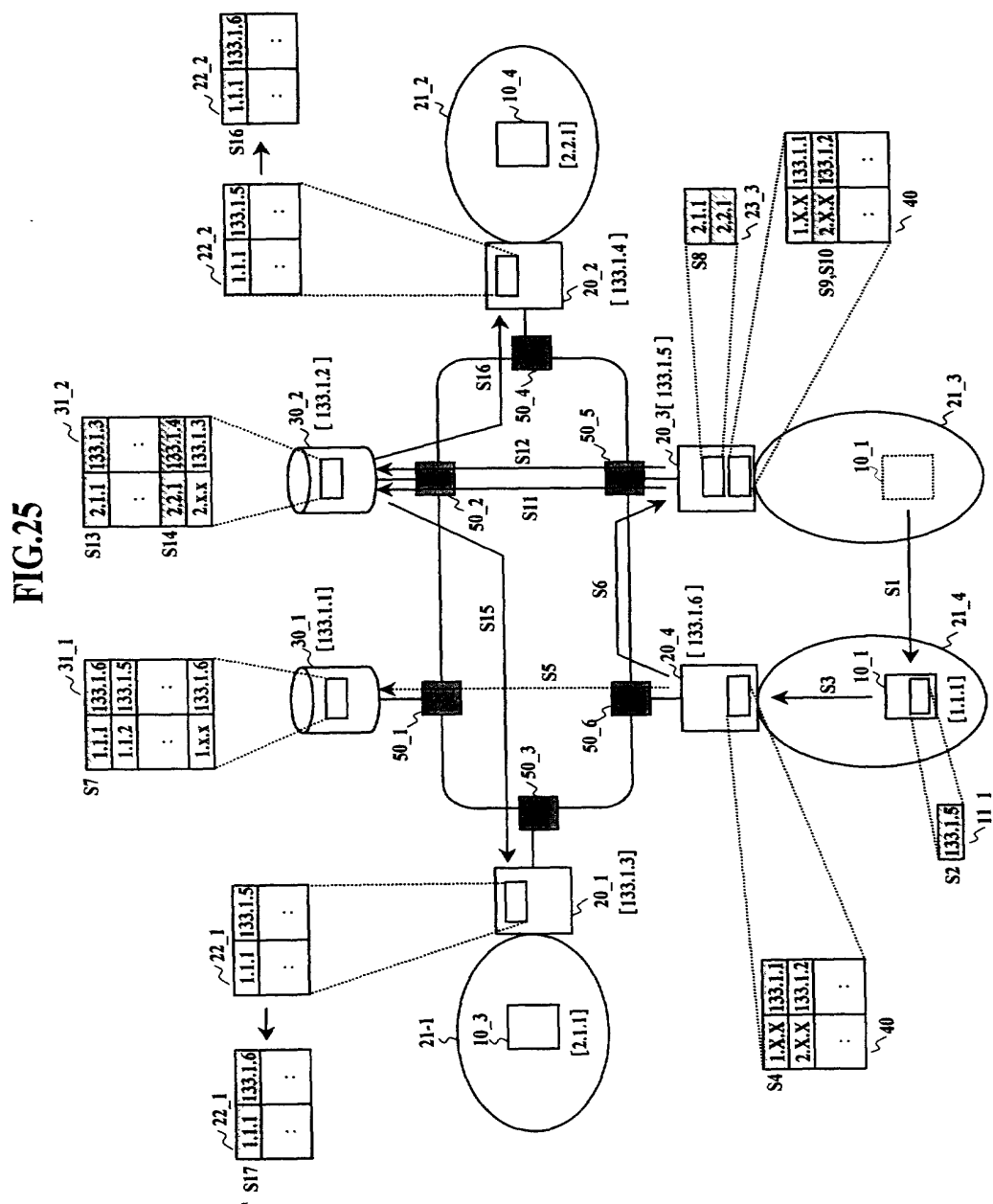


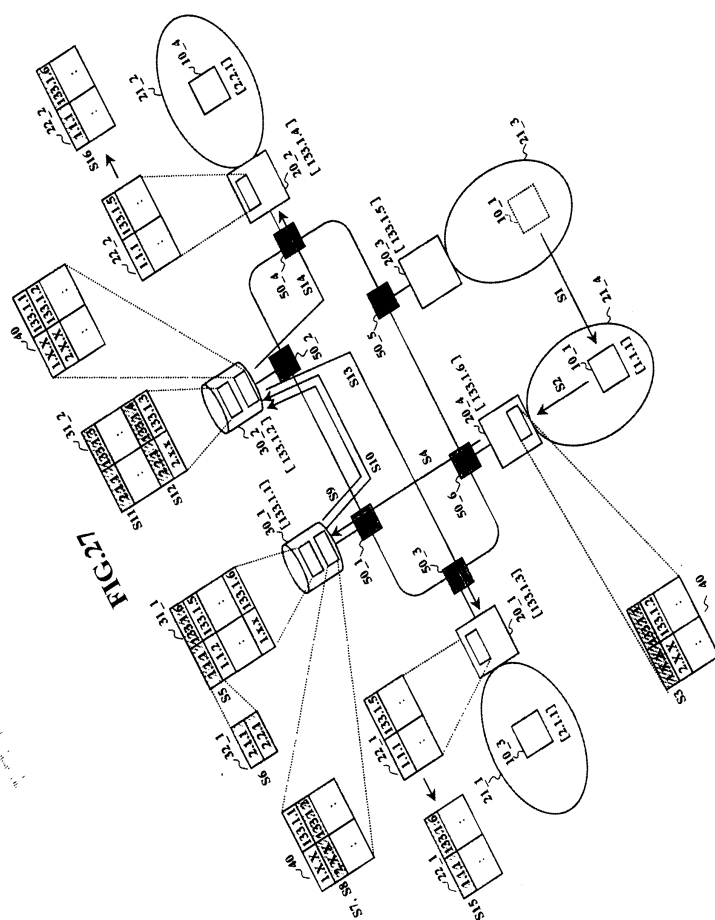
FIG. 24













**FIG.29**

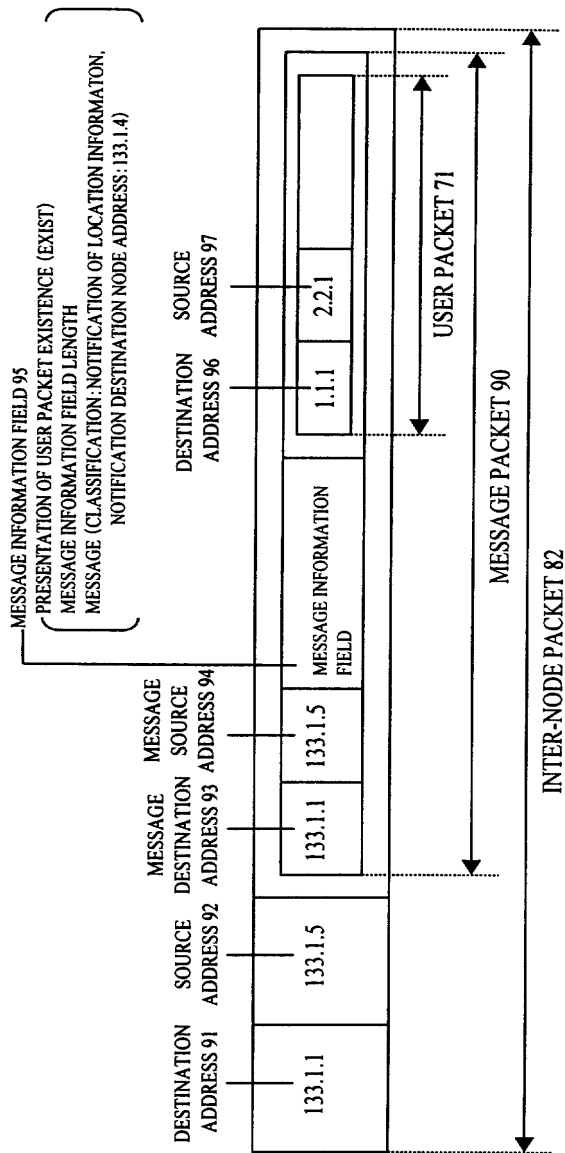


FIG. 30 is a schematic diagram of a network system 3000. The network system 3000 includes a central processing unit 3001, a memory unit 3002, a network interface unit 3003, and a storage unit 3004. The central processing unit 3001 is connected to the memory unit 3002, the network interface unit 3003, and the storage unit 3004. The network interface unit 3003 is connected to a network 3005. The storage unit 3004 is connected to the central processing unit 3001. The network 3005 is connected to a plurality of devices 3006, 3007, 3008, 3009, 3010, 3011, 3012, 3013, 3014, 3015, 3016, 3017, 3018, 3019, 3020, 3021, 3022, 3023, 3024, 3025, 3026, 3027, 3028, 3029, 3030, 3031, 3032, 3033, 3034, 3035, 3036, 3037, 3038, 3039, 3040, 3041, 3042, 3043, 3044, 3045, 3046, 3047, 3048, 3049, 3050, 3051, 3052, 3053, 3054, 3055, 3056, 3057, 3058, 3059, 3060, 3061, 3062, 3063, 3064, 3065, 3066, 3067, 3068, 3069, 3070, 3071, 3072, 3073, 3074, 3075, 3076, 3077, 3078, 3079, 3080, 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3090, 3091, 3092, 3093, 3094, 3095, 3096, 3097, 3098, 3099, 3100, 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3117, 3118, 3119, 3120, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 3128, 3129, 3130, 3131, 3132, 3133, 3134, 3135, 3136, 3137, 3138, 3139, 3140, 3141, 3142, 3143, 3144, 3145, 3146, 3147, 3148, 3149, 3150, 3151, 3152, 3153, 3154, 3155, 3156, 3157, 3158, 3159, 3160, 3161, 3162, 3163, 3164, 3165, 3166, 3167, 3168, 3169, 3170, 3171, 3172, 3173, 3174, 3175, 3176, 3177, 3178, 3179, 3180, 3181, 3182, 3183, 3184, 3185, 3186, 3187, 3188, 3189, 3190, 3191, 3192, 3193, 3194, 3195, 3196, 3197, 3198, 3199, 3200, 3201, 3202, 3203, 3204, 3205, 3206, 3207, 3208, 3209, 3210, 3211, 3212, 3213, 3214, 3215, 3216, 3217, 3218, 3219, 3220, 3221, 3222, 3223, 3224, 3225, 3226, 3227, 3228, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 3240, 3241, 3242, 3243, 3244, 3245, 3246, 3247, 3248, 3249, 3250, 3251, 3252, 3253, 3254, 3255, 3256, 3257, 3258, 3259, 3260, 3261, 3262, 3263, 3264, 3265, 3266, 3267, 3268, 3269, 3270, 3271, 3272, 3273, 3274, 3275, 3276, 3277, 3278, 3279, 3280, 3281, 3282, 3283, 3284, 3285, 3286, 3287, 3288, 3289, 3290, 3291, 3292, 3293, 3294, 3295, 3296, 3297, 3298, 3299, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3307, 3308, 3309, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341, 3342, 3343, 3344, 3345, 3346, 3347, 3348, 3349, 3350, 3351, 3352, 3353, 3354, 3355, 3356, 3357, 3358, 3359, 3360, 3361, 3362, 3363, 3364, 3365, 3366, 3367, 3368, 3369, 3370, 3371, 3372, 3373, 3374, 3375, 3376, 3377, 3378, 3379, 3380, 3381, 3382, 3383, 3384, 3385, 3386, 3387, 3388, 3389, 3390, 3391, 3392, 3393, 3394, 3395, 3396, 3397, 3398, 3399, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 3408, 3409, 3410, 3411, 3412, 3413, 3414, 3415, 3416, 3417, 3418, 3419, 3420, 3421, 3422, 3423, 3424, 3425, 3426, 3427, 3428, 3429, 3430, 3431, 3432, 3433, 3434, 3435, 3436, 3437, 3438, 3439, 3440, 3441, 3442, 3443, 3444, 3445, 3446, 3447, 3448, 3449, 3450, 3451, 3452, 3453, 3454, 3455, 3456, 3457, 3458, 3459, 3460, 3461, 3462, 3463, 3464, 3465, 3466, 3467, 3468, 3469, 3470, 3471, 3472, 3473, 3474, 3475, 3476, 3477, 3478, 3479, 3480, 3481, 3482, 3483, 3484, 3485, 3486, 3487, 3488, 3489, 3490, 3491, 3492, 3493, 3494, 3495, 3496, 3497, 3498, 3499, 3500, 3501, 3502, 3503, 3504, 3505, 3506, 3507, 3508, 3509, 3510, 3511, 3512, 3513, 3514, 3515, 3516, 3517, 3518, 3519, 3520, 3521, 3522, 3523, 3524, 3525, 3526, 3527, 3528, 3529, 3530, 3531, 3532, 3533, 3534, 3535, 3536, 3537, 3538, 3539, 3540, 3541, 3542, 3543, 3544, 3545, 3546, 3547, 3548, 3549, 3550, 3551, 3552, 3553, 3554, 3555, 3556, 3557, 3558, 3559, 3560, 3561, 3562, 3563, 3564, 3565, 3566, 3567, 3568, 3569, 3570, 3571, 3572, 3573, 3574, 3575, 3576, 3577, 3578, 3579, 3580, 3581, 3582, 3583, 3584, 3585, 3586, 3587, 3588, 3589, 3590, 3591, 3592, 3593, 3594, 3595, 3596, 3597, 3598, 3599, 3600, 3601, 3602, 3603, 3604, 3605, 3606, 3607, 3608, 3609, 3610, 3611, 3612, 3613, 3614, 3615, 3616, 3617, 3618, 3619, 3620, 3621, 3622, 3623, 3624, 3625, 3626, 3627, 3628, 3629, 3630, 3631, 3632, 3633, 3634, 3635, 3636, 3637, 3638, 3639, 3640, 3641, 3642, 3643, 3644, 3645, 3646, 3647, 3648, 3649, 3650, 3651, 3652, 3653, 3654, 3655, 3656, 3657, 3658, 3659, 3660, 3661, 3662, 3663, 3664, 3665, 3666, 3667, 3668, 3669, 3670, 3671, 3672, 3673, 3674, 3675, 3676, 3677, 3678, 3679, 3680, 3681, 3682, 3683, 3684, 3685, 3686, 3687, 3688, 3689, 3690, 3691, 3692, 3693, 3694, 3695, 3696, 3697, 3698, 3699, 3700, 3701, 3702, 3703, 3704, 3705, 3706, 3707, 3708, 3709, 3710, 3711, 3712, 3713, 3714, 3715, 3716, 3717, 3718, 3719, 3720, 3721, 3722, 3723, 3724, 3725, 3726, 3727, 3728, 3729, 3730, 3731, 3732, 3733, 3734, 3735, 3736, 3737, 3738, 3739, 3740, 3741, 3742, 3743, 3744, 3745, 3746, 3747, 3748, 3749, 3750, 3751, 3752, 3753, 3754, 3755, 3756, 3757, 3758, 3759, 3760, 3761, 3762, 3763, 3764, 3765, 3766, 3767, 3768, 3769, 3770, 3771, 3772, 3773, 3774, 3775, 3776, 3777, 3778, 3779, 3780, 3781, 3782, 3783, 3784, 3785, 3786, 3787, 3788, 3789, 3790, 3791, 3792, 3793, 3794, 3795, 3796, 3797, 3798, 3799, 3800, 3801, 3802, 3803, 3804, 3805, 3806, 3807, 3808, 3809, 3810, 3811, 3812, 3813, 3814, 3815, 3816, 3817, 3818, 3819, 3820, 3821, 3822, 3823, 3824, 3825, 3826, 3827, 3828, 3829, 3830, 3831, 3832, 3833, 3834, 3835, 3836, 3837, 3838, 3839, 3840, 3841, 3842, 3843, 3844, 3845, 3846, 3847, 3848, 3849, 3850, 3851, 3852, 3853, 3854, 3855, 3856, 3857, 3858, 3859, 3860, 3861, 3862, 3863, 3864, 3865, 3866, 3867, 3868, 3869, 3870, 3871, 3872, 3873, 3874, 3875, 3876, 3877, 3878, 3879, 3880, 3881, 3882, 3883, 3884, 3885, 3886, 3887, 3888, 3889, 3890, 3891, 3892, 3893, 3894, 3895, 3896, 3897, 3898, 3899, 3900, 3901, 3902, 3903, 3904, 3905, 3906, 3907, 3908, 3909, 3910, 3911, 3912, 3913, 3914, 3915, 3916, 3917, 3918, 3919, 3920, 3921, 3922, 3923, 3924, 3925, 3926, 3927, 3928, 3929, 3930, 3931, 3932, 3933, 3934, 3935, 3936, 3937, 3938, 3939, 3940, 3941, 3942, 3943, 3944, 3945, 3946, 3947, 3948, 3949, 3950, 3951, 3952, 3953, 3954, 3955, 3956, 3957, 3958, 3959, 3960, 3961, 3962, 3963, 3964, 3965, 3966, 3967, 3968, 3969, 3970, 3971, 3972, 3973, 3974, 3975, 3976, 3977, 3978, 3979, 3980, 3981, 3982, 3983, 3984, 3985, 3986, 3987, 3988, 3989, 3990, 3991, 3992, 3993, 3994, 3995, 3996, 3997, 3998, 3999, 4000.

FIG. 30

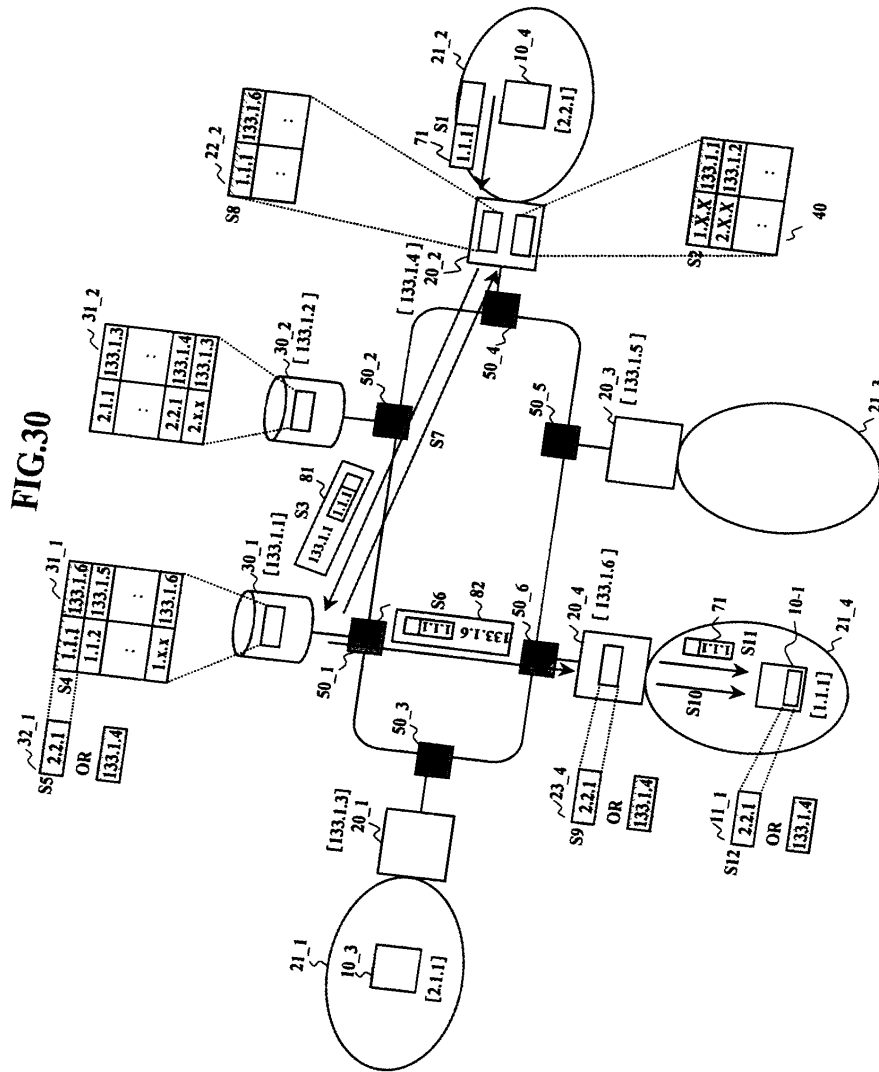


FIG. 31

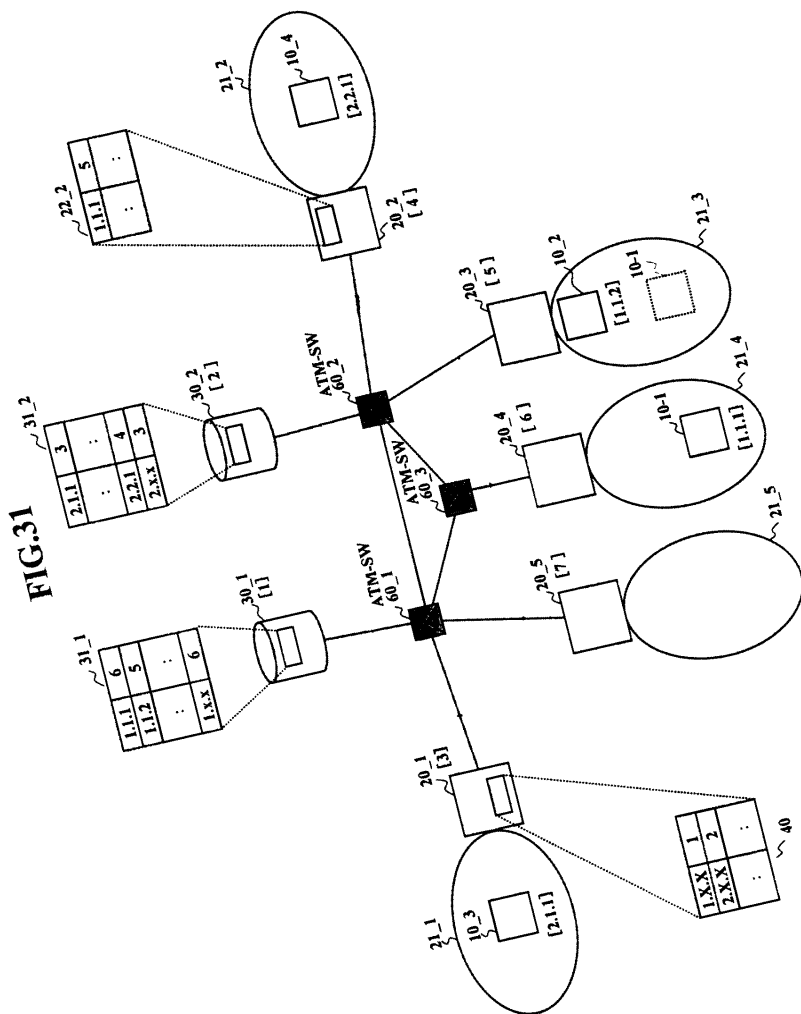


FIG. 32

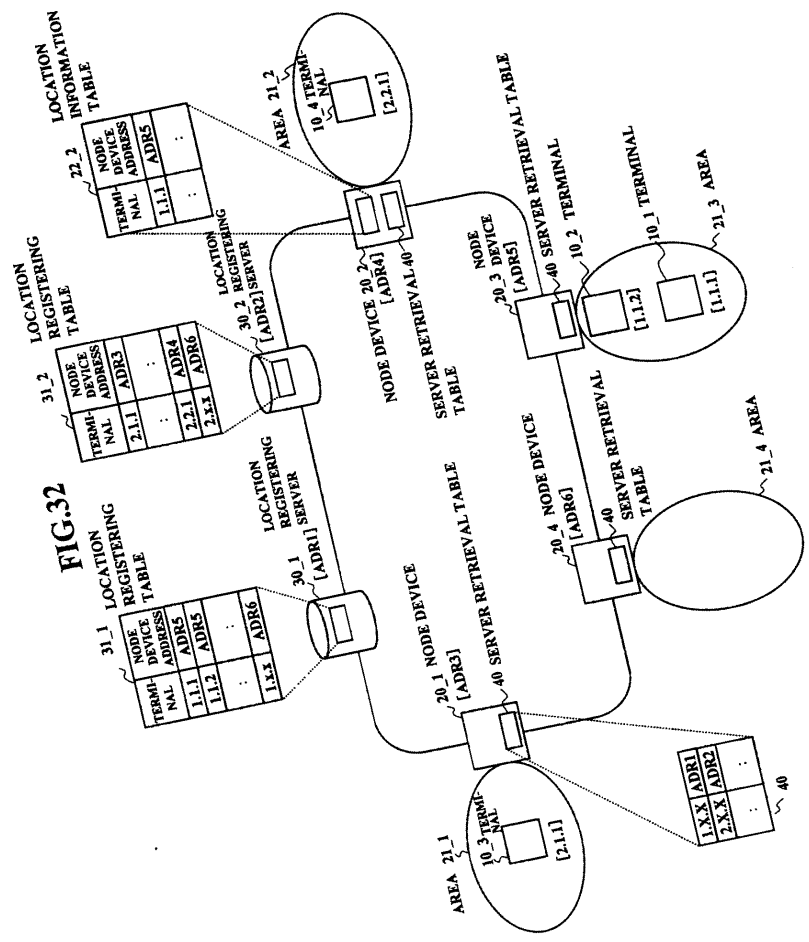




FIG. 33 is a schematic diagram of a network system 100. The network system 100 includes a central processing unit 10, a memory unit 20, and a network interface unit 30. The central processing unit 10 is connected to the memory unit 20 and the network interface unit 30. The network interface unit 30 is connected to a network 40. The network 40 includes a plurality of nodes 10\_1, 10\_2, 10\_3, 10\_4, 10\_5, 10\_6, 10\_7, 10\_8, 10\_9, 10\_10, 10\_11, 10\_12, 10\_13, 10\_14, 10\_15, 10\_16, 10\_17, 10\_18, 10\_19, 10\_20, 10\_21, 10\_22, 10\_23, 10\_24, 10\_25, 10\_26, 10\_27, 10\_28, 10\_29, 10\_30, 10\_31, 10\_32, 10\_33, 10\_34, 10\_35, 10\_36, 10\_37, 10\_38, 10\_39, 10\_40, 10\_41, 10\_42, 10\_43, 10\_44, 10\_45, 10\_46, 10\_47, 10\_48, 10\_49, 10\_50, 10\_51, 10\_52, 10\_53, 10\_54, 10\_55, 10\_56, 10\_57, 10\_58, 10\_59, 10\_60, 10\_61, 10\_62, 10\_63, 10\_64, 10\_65, 10\_66, 10\_67, 10\_68, 10\_69, 10\_70, 10\_71, 10\_72, 10\_73, 10\_74, 10\_75, 10\_76, 10\_77, 10\_78, 10\_79, 10\_80, 10\_81, 10\_82, 10\_83, 10\_84, 10\_85, 10\_86, 10\_87, 10\_88, 10\_89, 10\_90, 10\_91, 10\_92, 10\_93, 10\_94, 10\_95, 10\_96, 10\_97, 10\_98, 10\_99, 10\_100. The network system 100 is configured to perform a network operation.

FIG.33

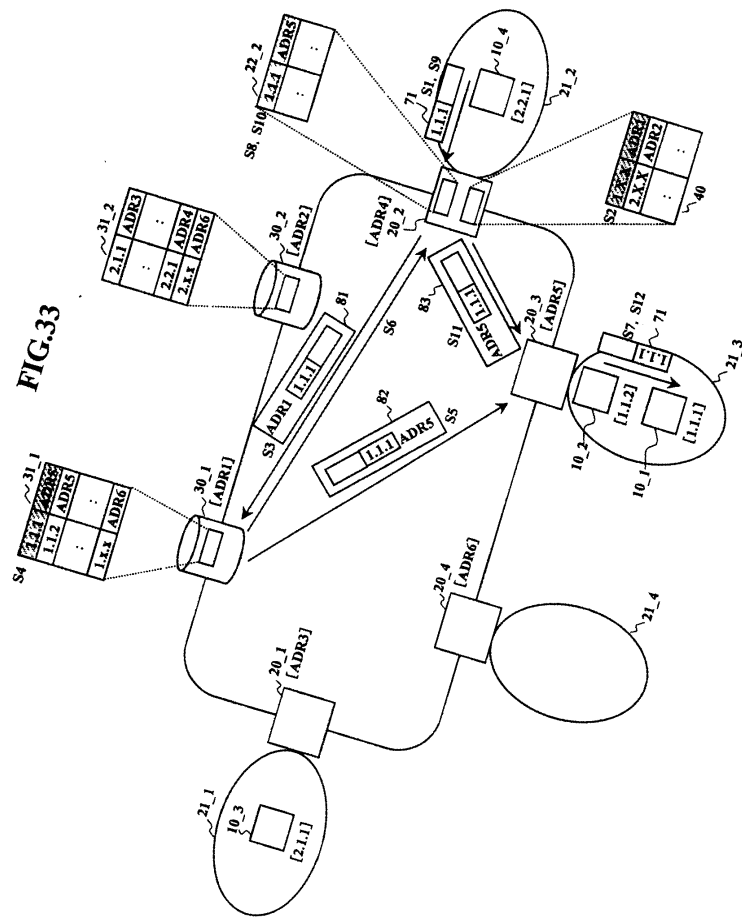


FIG. 34

